

**ABSTRACT**

A process for the preparation of hydrogen and a mixture of hydrogen and carbon monoxide containing gas from a carbonaceous feedstock by performing the following steps: (a) preparing a mixture of hydrogen and carbon monoxide having a temperature of above 700°C (b) catalytic steam reforming a carbonaceous feedstock in a convective steam reformer zone, wherein the required heat for the steam reforming reaction is provided by convective heat exchange between the steam reformer reactor zone and the effluent of step (a) to obtain as separate products a steam reforming product having a hydrogen to CO molar ratio of greater than 2 and a cooled effluent of step (a), and (c) separating hydrogen from the steam reforming product.